

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): A positive active material slurry composition comprising:

a physical mixture of
 a positive active material comprising a lithiated transition metal compound, and
 an additive ~~selected from the group consisting of semi-metals, metals and oxides thereof~~, said additive at least one of Si, B, Ti, Ga, Ge, Ca, Mg, Sr and Ba;

a binder;

a carbon conductive agent; and

an organic solvent, wherein said positive active material composition is prepared by physically mixing said positive active material, said binder in said organic solvent in a form of slurry.

Claim 2 (Canceled):

Claim 3 (Original): The positive active material composition of claim 1 wherein the lithiated transition metal compound is selected from the group consisting of compounds represented by formulas 1 to 13:

- | | |
|---|------|
| Li_xMnA_2 | (1) |
| $\text{Li}_x\text{MnO}_{2-z}\text{A}_z$ | (2) |
| $\text{Li}_x\text{Mn}_{1-y}\text{M}'_y\text{A}_2$ | (3) |
| $\text{Li}_x\text{Mn}_2\text{A}_4$ | (4) |
| $\text{Li}_x\text{Mn}_2\text{O}_{4-z}\text{A}_z$ | (5) |
| $\text{Li}_x\text{Mn}_{2-y}\text{M}'_y\text{A}_4$ | (6) |
| Li_xBA_2 | (7) |
| $\text{Li}_x\text{BO}_{2-z}\text{A}_z$ | (8) |
| $\text{Li}_x\text{B}_{1-y}\text{M}''_y\text{A}_2$ | (9) |
| $\text{Li}_x\text{B}_{1-y}\text{M}''_y\text{O}_{2-z}\text{A}_z$ | (10) |
| $\text{Li}_x\text{NiCoA}_2$ | (11) |
| $\text{Li}_x\text{NiCoO}_{2-z}\text{A}_2$ | (12) |
| $\text{Li}_x\text{Ni}_{1-y-z}\text{Co}_y\text{M}''_z\text{A}_2$ | (13) |

wherein $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Co, Mg, La, Ce, Sr and V, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, A is selected from O, F, S or P, and B is Ni or Co.

Claim 4 (Original): The positive active material composition of claim 1 wherein the additive is 0.01 to 10 wt% of the positive active material.

Claim 5 (Currently Amended): A method of preparing a positive electrode for a rechargeable lithium battery comprising the steps of:

physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, B, Ti, Ga, Ge, Ca, Mg, Sr and Ba ~~being selected from the group consisting of semi-metals, metals, and oxides thereof;~~

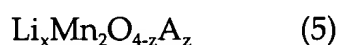
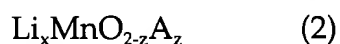
adding an organic solvent, a binder, and a carbon conductive agent to the mixture to prepare a positive active material slurry composition;

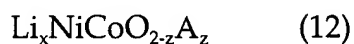
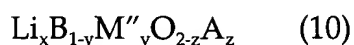
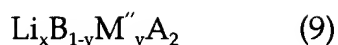
coating the positive active material composition on a current collector; and

drying the current collector coated with the positive active material slurry composition.

Claim 6 (Original): The method of claim 5 wherein the amount of the additive is 0.01 to 10 wt% of the positive active material.

Claim 7 (Original): The method of claim 5 wherein the lithiated transition metal compound is selected from the group consisting of the formulas 1 to 13:





where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Co, Mg, La, Ce, Sr and V, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, A is selected from O, F, S or P, and B is Ni or Co.

Claim 8 (Previously Presented): The positive active material composition of claim 1, wherein said organic solvent is N-methylpyrrolidone.

Claim 9 (Previously Presented): The method of claim 5, wherein said organic solvent is N-methylpyrrolidone.

Claim 10 (Withdrawn): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



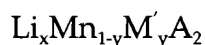
where $1.0 \leq x \leq 1.1$, and A is selected from O, F, S or P.

Claim 11 (Withdrawn): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq z \leq 0.5$, and A is selected from O, F, S or P.

Claim 12 (Withdrawn): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



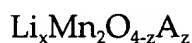
where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, M' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Co, Mg, La, Ce, Sr and V, and A is selected from O, F, S or P.

Claim 13 (Withdrawn): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



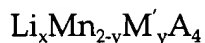
where $1.0 \leq x \leq 1.1$, and A is selected from O, F, S or P.

Claim 14 (Withdrawn): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq z \leq 0.5$, and A is selected from O, F, S or P.

Claim 15 (Withdrawn): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, M' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Co, Mg, La, Ce, Sr and V, and A is selected from O, F, S or P.

Claim 16 (Previously Presented): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



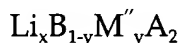
where $1.0 \leq x \leq 1.1$, A is selected from O, F, S or P, and B is Ni or Co.

Claim 17 (Previously Presented): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



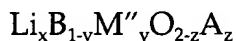
where $1.0 \leq x \leq 1.1$, $0.01 \leq z \leq 0.5$, A is selected from O, F, S or P, and B is Ni or Co.

Claim 18 (Previously Presented): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, and A is selected from O, F, S or P, and B is Ni or Co.

Claim 19 (Previously Presented): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, A is selected from O, F, S or P, and B is Ni or Co.

Claim 20 (Previously Presented): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



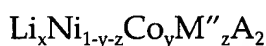
where $1.0 \leq x \leq 1.1$, and A is selected from O, F, S or P.

Claim 21 (Previously Presented): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq z \leq 0.5$, and A is selected from O, F, S or P.

Claim 22 (Previously Presented): The positive active material composition of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, and A is selected from O, F, S or P.

Claim 23 (Withdrawn): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



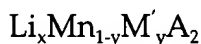
where $1.0 \leq x \leq 1.1$, and A is selected from O, F, S or P.

Claim 24 (Withdrawn): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq z \leq 0.5$, and A is selected from O, F, S or P.

Claim 25 (Withdrawn): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



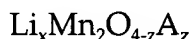
where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Co, Mg, La, Ce, Sr and V, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, and A is selected from O, F, S or P, and B is Ni or Co.

Claim 26 (Withdrawn): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



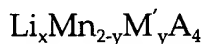
where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Co, Mg, La, Ce, Sr and V, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, and A is selected from O, F, S or P, and B is Ni or Co.

Claim 27 (Withdrawn): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq z \leq 0.5$, and A is selected from O, F, S or P.

Claim 28 (Withdrawn): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, M' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, and A is selected from O, F, S or P.

Claim 29 (Previously Presented): The method of claim 1 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, A is selected from O, F, S or P, and B is Ni or Co.

Claim 30 (Previously Presented): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



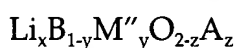
where $1.0 \leq x \leq 1.1$, $0.01 \leq z \leq 0.5$, A is selected from O, F, S or P, and B is Ni or Co.

Claim 31 (Previously Presented): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, A is selected from O, F, S or P, and B is Ni or Co.

Claim 32 (Previously Presented): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, A is selected from O, F, S or P, and B is Ni or Co.

Claim 33 (Previously Presented): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



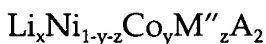
where $1.0 \leq x \leq 1.1$, and A is selected from O, F, S or P.

Claim 34 (Previously Presented): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq z \leq 0.5$, and A is selected from O, F, S or P.

Claim 35 (Previously Presented): The method of claim 5 wherein the lithiated transition metal compound is a compound represented by formula:



where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, and A is selected from O, F, S or P.

Claim 36 (Canceled)

Claim 37 (New): The method of claim 5 wherein the semi-metal is at least one semi-metal selected from the group consisting of Si, B, Ti, Ga, Ge and Al, and the metal is at least one metal selected from the group consisting of Ca, Mg, Sr and Ba.